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U.S. DEPARTMENT OF TRANSPORTATION  
OFFICE OF HAZARDOUS MATERIALS  
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June 29, 2000

Reference: Docket Number RSPA-99-6283 - 47

Dear Sir:

Nuclear Fuel Services, Inc. (NFS) submits the following comments concerning the proposed rulemaking to amend requirements in the Hazardous Materials Regulations (HMR) pertaining to the transportation of radioactive materials based on recent changes contained in the International Atomic Energy Agency (IAEA) publication entitled "IAEA Safety Standards Series Regulations for the Safe Transport of Radioactive Material, 1996 Edition, Requirements, No. ST-1", hereafter referred to as ST-1.

NFS, classed as a small business, manufactures nuclear fuel under a Nuclear Regulatory Commission License (SNM-124). This fuel contains uranium highly enriched in the U-235 isotope. This fuel is routinely shipped to another licensee for incorporation into a finished assembly. NFS also ships low-level radioactive waste generated as a result of these operations and from decommissioning activities involving former facilities, some of which processed plutonium fuel.

NFS uses the Specification 6L and 6M shipping packages, approved in 49 CFR 173.417, to ship highly enriched uranium. To a lesser extent, NFS also uses the 55-gallon 1A2 steel drum package. In addition, NFS may need to use the 20PF and 21PF series UF<sub>6</sub> packages in future business. There is no approval to use these specific packages in the IAEA's ST-1 regulations. NFS requests that changes made to the HMR include the approval to use these packages authorized in 49 CFR 173.417.

The ST-1 requirements for "Fissile Material Exemption" (Paragraph 672(a)), and the NRC regulations contained in 10 CFR 71.53, place a limit on the amount of fissile material which may be placed on a conveyance, when using some of these exemptions to classify the shipment. This limit on the amount of fissile material which may be placed on a conveyance is not currently present in the corresponding section of the HMR, 49 CFR 173.453. When the NRC regulations were revised several years ago, no opportunity was allowed for user's comments. NFS, however, did file an objection to the requirement.

ST-1, paragraph 672.(a) requires that a consignment of fissile material packages containing:

- a. no more than 15 grams of fissile material,
- b. a maximum concentration of 5 grams fissile material per liter and an H/X > 5200, OR
- c. a maximum concentration of 5 grams per 10 liter volume (0.5 grams/liter)

not exceed a specified quantity of fissile material. It would appear that the concentration limits required for this classification are sufficient to ensure safety during transportation. NFS makes

some waste shipments under the provisions of 49 CFR 173.453 in which up to 92 55-gallon drums, each containing a maximum of 100 grams of U-235 (<0.5 g/l), are shipped on one conveyance as LSA material. A change, in which the conveyance is limited to 400 grams of U-235, would result in 22 additional shipments. These additional shipments would expose the general public to this material over a longer period of time.

NFS has reviewed the proposed nuclide-specific exemption table and has found that shipments currently being made using the "< 0.002 uCi/g" exemption, would remain exempt using the nuclide-specific concentration provisions of ST-1. Also, the change in the maximum uranium enrichment for an "Unlimited" A<sub>2</sub> value from 5 to 20 wt. % will simplify many current shipments containing decommissioning materials.

NFS supports the addition of a "Criticality Safety Index" (CSI) as it eliminates conflicts which have occasionally occurred with the current Transport Index (TI). However, the requirement in paragraph 547 of ST-1 to put the UN number for unpackaged LSA or SCO materials, or exclusive use, shipments on either the radiation placard or on the container will require additional effort, as a given package may be used for different shipment classifications. The current "flip-on, flip-off" placards on truck trailers will not be usable because of the need to display this number. Thus, the shipper will incur additional time and expense stocking and affixing the specialized labels.

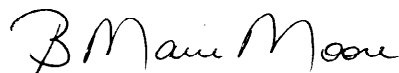
The ST-1 regulations do not have the specific LSA-I category for contaminated earth, rubble, and debris that is present in the current HMR. The changing of the limit on this category from  $1 \times 10^{-6}$  A<sub>2</sub>/g to 30 times the excepted activity concentration results in a decrease for NFS materials from about 12 nCi/g to 1.8 nCi/g. Use of the ST-1 value will require the upgrading of shipping packages from IP-1 to IP-2, at a great additional expense for NFS Decommissioning operations. However, the effective exempt consignment limit for NFS materials is about 0.26 Ci.

ST-1 establishes a requirement for a quality assurance program in paragraph 310. Some guidance is needed as to the proposed level of detail required for this program before NFS can comment on it.

The Schedules in ST-1 make those regulations easier to use than the current HMR, since paragraph references are given for particular shipment classifications. This enhances compliance with the regulations.

NFS generally supports the proposed revision of the HMR, provided the items cited above can be resolved. If you or your staff have any questions, require additional information, or wish to discuss this letter, please contact me or Mr. Gilbert Rosenberger, Health Physicist, at 423-743-9141, extension 1252. Please reference our unique document identification number 44G-00-0220 in any correspondence concerning this letter.

Sincerely,  
**NUCLEAR FUEL SERVICES, INC.**



B. Marie Moore  
Vice President  
Safety and Regulatory